



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	MICHAEL D. ROSENZWEIG	§	Group Art Unit:	2642
		§		
		§		
Serial No.:	09/892,681	§		
		§	Examiner:	William J. Deane, Jr.
		§		
Filed:	June 27, 2001	§		
		§		
For:	REDUCING UNDESIRABLE AUDIO SIGNALS	§	Atty. Dkt. No.:	ITL.0597US (P11773)
		§		
		§	Assignee:	Intel Corporation

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**Declaration Under 37 C.F.R. §1.131**

I, Michael D. Rosenzweig, declare as follows:


1. I am an employee of Intel Corporation ("Intel"), assignee the above-entitled application, and was an employee of Intel at the time of the filing of the application.
2. Prior to April 3, 2001, I conceived of the subject matter set forth in a pair of invention disclosure forms, true and correct copies of which are attached hereto at Exhibit A.
3. While the dates of creation of the invention disclosure forms and the date the invention disclosure forms were received in the Intel legal department have been redacted, these dates are prior to April 3, 2001.
4. Also attached at Exhibit A is a true and correct copy of a corresponding Intel data sheet, indicating the above-entitled application was opened and assigned to Trop, Pruner & Hu, P.C. by Intel on April 26, 2001.
5. Shortly after that time, I was contacted by Ruben Bains, an attorney at Trop, Pruner & Hu, P.C. I had one or more telephone conferences with Mr. Bains regarding the subject matter of the patent application, and he prepared a draft of the above-entitled application. On or about June 9, 2005, I received a draft application from Mr. Bains,

which I diligently reviewed and commented on. Attached hereto at Exhibit B is a true and correct copy of a letter from Mr. Bains dated June 8, 2001 enclosing the draft application.

6. I received a final version of the patent application from Mr. Bains on or about June 26, 2001. I reviewed the final version and on June 27, 2001, I executed a declaration and assignment for the patent application, and provided these papers to Mr. Bains via facsimile. Also attached hereto at Exhibit B is a true and correct copy of a letter dated June 25, 2001 that I received from Mr. Bains with the final patent application.
7. The above-entitled patent application was filed that same day, June 27, 2001.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under §1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 22 Sep 2005

  
Michael D. Rosenzweig

## **EXHIBIT A**

171738



**INTEL INVENTION DISCLOSURE**  
**ATTORNEY-CLIENT PRIVILEGED COMMUNICATION**  
located at <http://legal.intel.com>

DATE: Redacted

WINELESS / WCCG / HCD

It is important to provide accurate and detailed information on this form. The information will be used to evaluate your invention for possible filing as a patent application. When completed and signed, please return this form to the Legal Department at JF3-147. You can submit electronically via e-mail to "invention disclosure submission" if all of the information is electronic, including drawings and supervisor approval. If you have any questions, please call 264-0444.

21. Inventor: Rosenzweig Michael D  
Last Name First Name Middle Initial  
Phone 978/568-5735 WS: HD2-230 Fax # 978/568-6486  
Citizenship: USA WWID: 10060288 Contractor: YES ☐ NO ☒  
Inventor E-Mail Address: Michael.rosenzweig@intel.com  
Home Address: 10 Stone Crossing Way  
City \_\_\_\_\_ State MA Zip 01748 Country USA  
\*Corporate Level Group (e.g. IAG, NCG, NBG) WCCG Division HCD Subdivision HCD SE  
Supervisor\* Gang Liang WWID 10602153 Phone \_\_\_\_\_ MS: HD2-230

**\*If you are unsure of this information, please discuss with your manager.**

(PROVIDE SAME INFORMATION AS ABOVE FOR EACH ADDITIONAL INVENTOR)

RECEIVED

2. Title of Invention: NOISE Cancellation in conjunction with MP3 playback Redacted
3. What technology/product/process (code name) does it relate to (be specific if you can):  
PCA Specification. Applications running on wireless devices.
4. Include several key words to describe the technology area of the invention in addition to # 3 above: Scalability. Wireless. Application. Software
5. Stage of development (i.e. % complete, simulations done, test chips if any, etc.): Concept/Specification
6. (a) Has a description of your invention been, or will it shortly be, published outside Intel:  
NO: X YES: \_\_\_\_\_ If YES, was the manuscript submitted for pre-publication approval? \_\_\_\_\_  
IDENTIFY THE PUBLICATION AND THE DATE PUBLISHED: \_\_\_\_\_
- (b) Has your invention been used/sold or planned to be used/sold by Intel or others?  
NO: \_\_\_\_\_ YES: \_\_\_\_\_ DATE WAS OR WILL BE SOLD: \_\_\_\_\_

ATTORNEY-CLIENT PRIVILEGED COMMUNICATION

- (c) Does this invention relate to technology that is or will be covered by a SIG (special interest group)/standard/ or specification?

NO: \_\_\_\_\_ YES: X Name of SIG/Standard/Specification: PCA Specification

- (d) If the invention is embodied in a semiconductor device, actual or anticipated date of tapeout? \_\_\_\_\_

- (e) If the invention is software, actual or anticipated date of any beta tests outside Intel Summer 2002

7. Was the invention conceived or constructed in collaboration with anyone other than an Intel blue badge employee or in performance of a project involving entities other than Intel, e.g. government, other companies, universities or consortia? NO: X YES: \_\_\_\_\_ Name of individual or entity: \_\_\_\_\_

8. Is this invention related to any other invention disclosure that you have recently submitted? If so, please give the title and inventors: PCA Related disclosures

PLEASE READ AND FOLLOW THE DIRECTIONS ON  
HOW TO WRITE A DESCRIPTION OF YOUR INVENTION

Please attach a description of the invention to this form and include the following information:

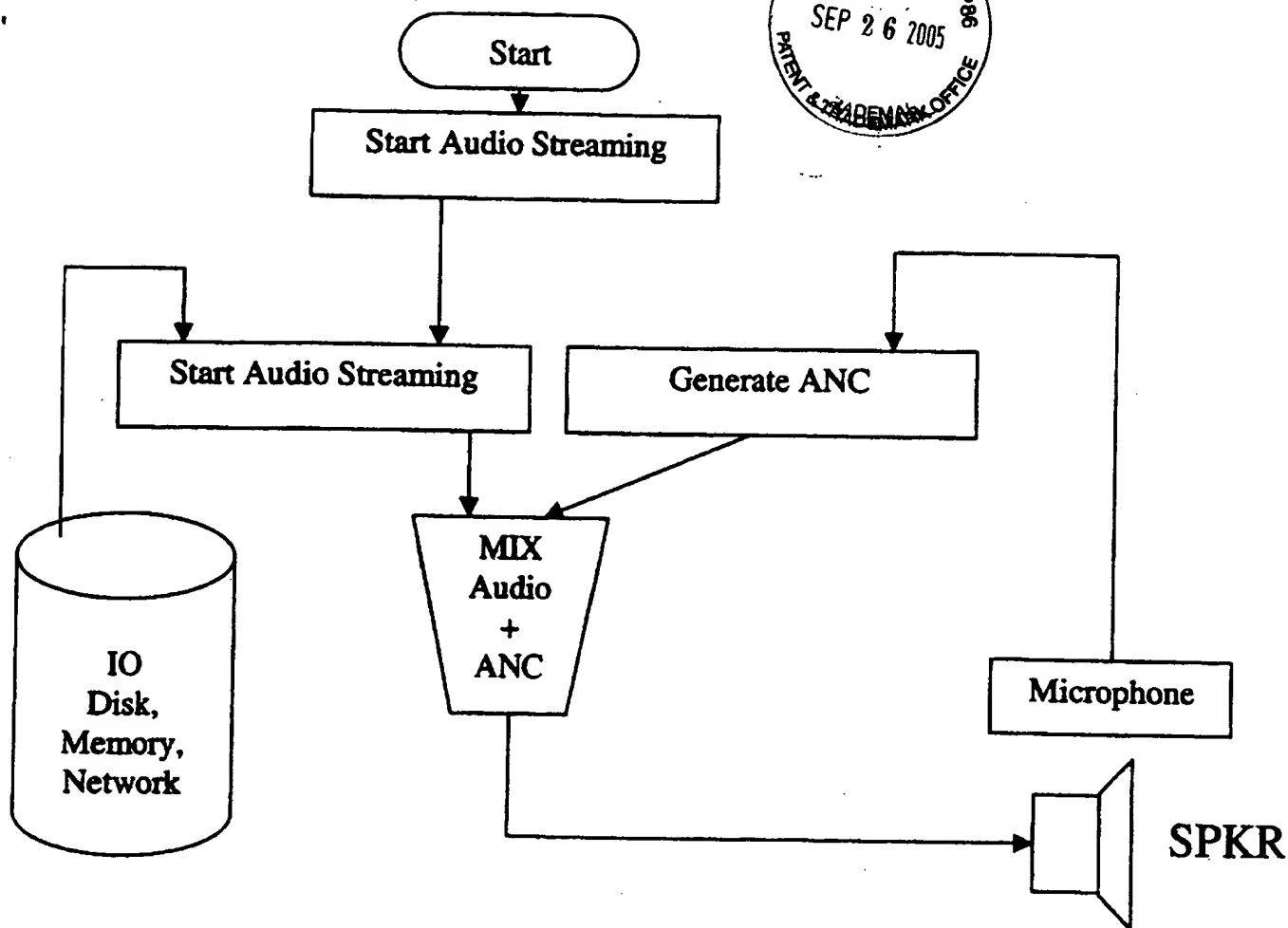
1. Describe in detail what the components of the invention are and how the invention works.

This invention is the combination of two well known functional components, an MP3 player and active noise cancellation (ANC) device. ANC is performed on the same processing engine as the MP3 decode (or other audio) functionality. This solution may include ANC enabled headphones which incorporate a microphone at each earpiece, or a microphone/speaker combination at the device.

2. Describe advantage(s) of your invention over what is done now.

Produces high quality audio in a noisy environment with a single device.

3. YOU MUST include at least one figure illustrating the invention.  
If the invention relates to software, include a flowchart or pseudo-code representation of the algorithm.



4. Value of your invention to Intel (how will it be used?).

Enable the delivery of high quality audio on PCA devices.

5. Explain how your invention is novel. If the technology itself is not new, explain what makes it different.

This is typically solved with the use of dedicated components, one for MP3 playback, and another device for ANC.

6. Identify the closest or most pertinent prior art that you are aware of.  
??

7. Who is likely to want to use this invention or infringe the patent  
If one is obtained and how would infringement be detected?

Vendors on MP3 players, PDA's with MP3 playback functionality, ANC headset manufacturers.

HAVE YOUR SUPERVISOR READ, DATE AND SIGN COMPLETED FORM  
OR FORWARD IT ELECTRONICALLY VIA E-MAIL TO "INVENTION DISCLOSURE SUBMISSION"

DATE: \_\_\_\_\_ SUPERVISOR: \_\_\_\_\_

BY THIS SIGNING, I (SUPERVISOR) ACKNOWLEDGE THAT I HAVE READ AND UNDERSTAND THIS  
DISCLOSURE AND RECOMMEND THAT THIS INVENTION BE PATENTED

# INTEL INVENTION DISCLOSURE

ATTORNEY-CLIENT PRIVILEGED COMMUNICATION  
located at <http://legal.intel.com>

DATE: RedactedUNLESS / WCCG / HCD  
COMM.

It is important to provide accurate and detailed information on this form. The information will be used to evaluate your invention for possible filing as a patent application. When completed and signed, please return this form to the Legal Department at JF3-147. You can submit electronically via e-mail to "invention disclosure submission" if all of the information is electronic, including drawings and supervisor approval. If you have any questions, please call 264-0444.

1. Inventor: Rosenzweig Michael D  
Last Name First Name Middle Initial  
Phone 978/568-5735 W/S: HD2-230 Fax # 978/568-6486  
Citizenship: USA WWID: 10060288 Contractor: YES NO X  
Inventor E-Mail Address: Michael.rosenzweig@intel.com  
Home Address: 10 Stone Crossing Way  
City MA State MA Zip 01748 Country USA  
\*Corporate Level Group (e.g. IAG, NCG, NBG) WCCG Division HCD Subdivision HCD SE  
Supervisor Gang Liang WWID 10602153 Phone W/S: HD2-230

\*If you are unsure of this information, please discuss with your manager.

(PROVIDE SAME INFORMATION AS ABOVE FOR EACH ADDITIONAL INVENTOR)

RECEIVED

Redacted

2. Title of Invention: Incorporation of anti-noise generation into a wireless device
3. What technology/product/process (code name) does it relate to (be specific if you can):  
PCA Specification. Applications running on wireless devices.
4. Include several key words to describe the technology area of the invention in addition to # 3 above: Scalability. Wireless. Application. Software
5. Stage of development (i.e. % complete, simulations done, test chips if any, etc.): Concept/Specification
6. (a) Has a description of your invention been, or will it shortly be, published outside Intel:  
NO: X YES:        If YES, was the manuscript submitted for pre-publication approval?         
IDENTIFY THE PUBLICATION AND THE DATE PUBLISHED:
- (b) Has your invention been used/sold or planned to be used/sold by Intel or others?  
NO:        YES:        DATE WAS OR WILL BE SOLD:

PATENT DATABASE GROUP  
INTEL LEGAL TEAM

ATTORNEY-CLIENT PRIVILEGED COMMUNICATION

(c) Does this invention relate to technology that is or will be covered by a SIG (special interest group)/standard/ or specification?

NO: \_\_\_\_\_ YES: X Name of SIG/Standard/Specification: PCA Specification

(d) If the invention is embodied in a semiconductor device, actual or anticipated date of tapeout? \_\_\_\_\_

(e) If the invention is software, actual or anticipated date of any beta tests outside Intel Summer 2002

7. Was the invention conceived or constructed in collaboration with anyone other than an Intel blue badge employee or in performance of a project involving entities other than Intel, e.g. government, other companies, universities or consortia? NO: X YES: \_\_\_\_\_ Name of individual or entity: \_\_\_\_\_

8. Is this invention related to any other invention disclosure that you have recently submitted? If so, please give the title and inventors: PCA Related disclosures

**PLEASE READ AND FOLLOW THE DIRECTIONS ON  
HOW TO WRITE A DESCRIPTION OF YOUR INVENTION**

Please attach a description of the invention to this form and include the following information:

1. Describe in detail what the components of the invention are and how the invention works.

This invention is the inclusion of active noise cancellation (ANC) into a wireless device. ANC is performed on wireless device, treating the wireless devices as a general purpose DSP engine. In controlled scenarios, the wireless device can then be used to "quite" noisy environments. This solution may include ANC enabled headphones (or earpiece) which incorporate a microphone at each earpiece, or a microphone/speaker combination at the device.

Example #1) A user could place their cell phone in their car and then active the built-in ANC functionality to provide a quite ride. The speaker/microphone combination built into the phone may be used, or through an audio connector, the stereo system in the automobile could be used for additional output power.

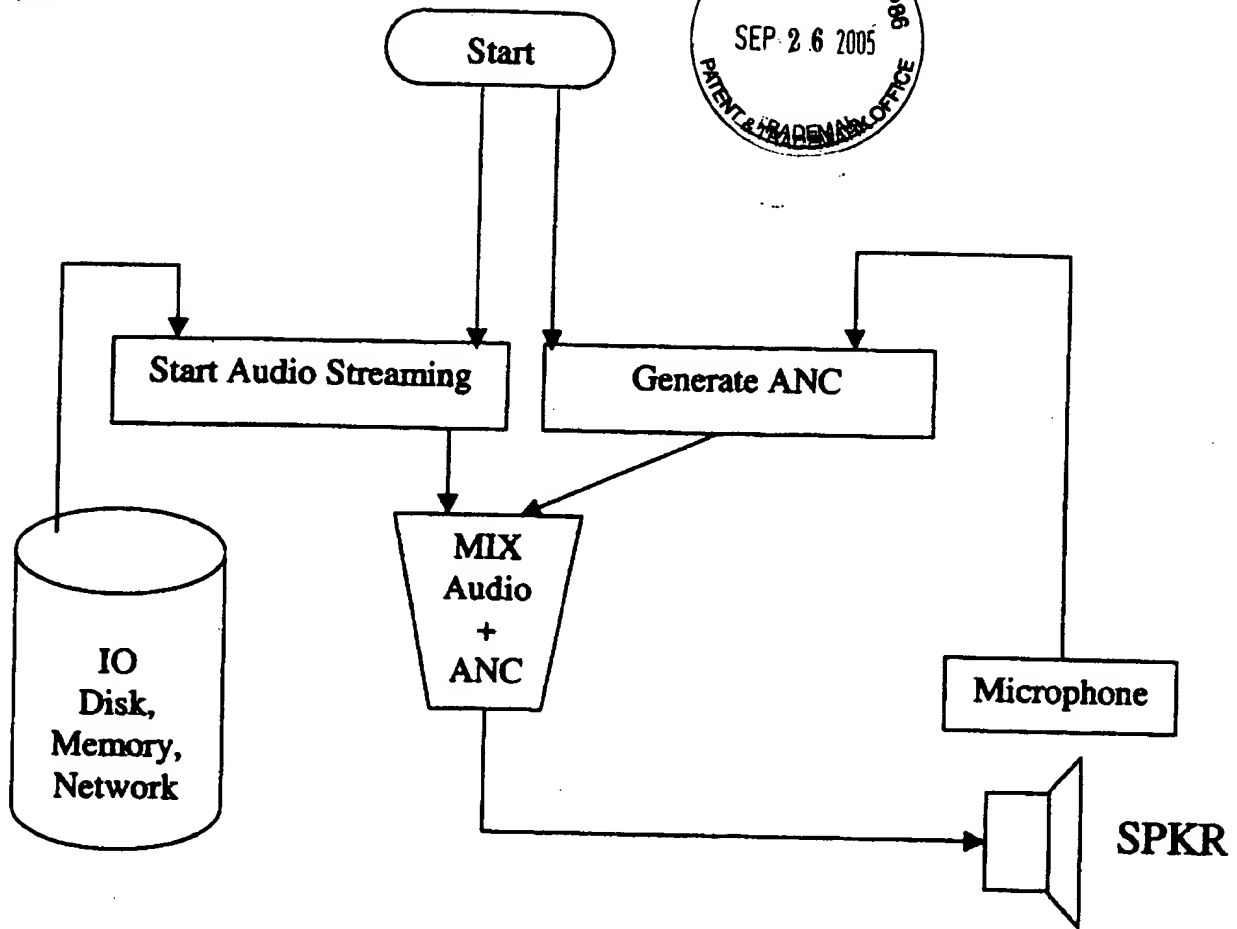
Example #2) Using the cell phone in a noisy environment such as an airport, where the built-in ANC is activated to reduce background noise.

2. Describe advantage(s) of your invention over what is done now.

Produces high quality speech/audio in a noisy environment using a single device.

3. YOU MUST include at least one figure illustrating the invention.  
If the invention relates to software, include a flowchart or pseudo-code representation of the algorithm.





4. Value of your invention to Intel (how will it be used?).

Enable the delivery of high quality audio on PCA devices.

5. Explain how your invention is novel. If the technology itself is not new, explain what makes it different.

This is typically solved with the use of dedicated components, one for MP3 playback, and another device for ANC.

6. Identify the closest or most pertinent prior art that you are aware of.  
??

7. Who is likely to want to use this invention or infringe the patent  
If one is obtained and how would infringement be detected?

Vendors of cell phones and other wireless devices looking to add additional value and utility to their devices.

HAVE YOUR SUPERVISOR READ, DATE AND SIGN COMPLETED FORM  
OR FORWARD IT ELECTRONICALLY VIA E-MAIL TO "INVENTION DISCLOSURE SUBMISSION"

DATE: \_\_\_\_\_ SUPERVISOR: \_\_\_\_\_

BY THIS SIGNING, I (SUPERVISOR) ACKNOWLEDGE THAT I HAVE READ AND UNDERSTAND THIS  
DISCLOSURE AND RECOMMEND THAT THE INVENTOR BE GRANTED A PATENT

Matter #: P11738

Intel Grp Atty: KMS TEL Work Atty: TPH

Matter Status: IN PROCESS

**TYPE OF INTEL PATENT APPLICATION FILE**

\*Patent: ☐ Utility ☐ Design ☐ Reissue ☐ Reexam ☐ CPA (C) ☐ CIP (X) ☐ Divisional (D)

Title of File: **ACTIVE NOISE CANCELLATION IN CONJUNCTION WITH MP3 PLAYBACK**

**INTEL DISCLOSURE AND FOREIGN FILING INFORMATION**

\*Disclosure number(s): 18289, 18290

\*Product/Process: PCA SPECIFICATION, APPLICATIONS RUNNING ON WIRELESS DEVICES

Intel Committee: WIRELESS COMMUNICATIONS & CO Intel Group: WCCG Intel Division: HCD

F-Filing: NO Ctry:

Notes: P11738 (18289 AND 18290) OPENED AND ASSIGNED TO TPH PER JB EMAIL ON 4/28/01 -MC.

**\*INTEL ABSTRACT CODES (Check One or More)**

Redacted

**INTL-0597-US (P11738)** (TNT/.....)

INTEL CORP. - WCC

FF - NO

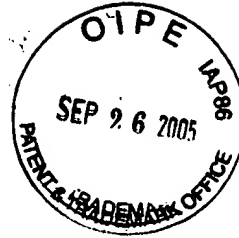
**\*INTEL ABSTF**

ACTIVE NOISE CANCELLATION IN CONJUNCTION WITH  
MP3 PLAYBACK

## **EXHIBIT B**

TROP, PRUNER & HU, P.C.

INTELLECTUAL PROPERTY LAW ATTORNEYS



8554 Katy Freeway, Suite 100  
Houston, Texas 77024

Business: (713) 468-8880  
Facsimile: (713) 468-8883

June 8, 2001

VIA UPS

Mr. Michael D. Rosenzweig  
Intel Corporation  
75 Reed Road, M/S #HD2-230  
Hudson, Massachusetts 01749

Re: U.S. Patent Application entitled  
*Reducing Undesirable Audio Signals*  
Intel's ref: P11773  
Our ref: INTL-0597-US

Dear Mike:

Enclosed is a draft of the above-referenced patent application on your invention. Please let me have your comments, preferably by telephone, so I can get a final version to you as soon as possible.

Very truly yours,

A handwritten signature in black ink, appearing to be "R. Bains".

Ruben S. Bains

RSB:svh

Enclosure  
Draft of Patent Application

**TROP, PRUNER & HU, P.C.**  
INTELLECTUAL PROPERTY LAW ATTORNEYS



8554 Katy Freeway, Suite 100  
Houston, Texas 77024

Business: (713) 468-8880  
Facsimile: (713) 468-8883

June 25, 2001

VIA UPS

Mr. Michael D. Rosenzweig  
Intel Corporation  
75 Reed Road, M/S #HD2-330  
Hudson, Massachusetts 01749

Re: U.S. Patent Application entitled  
*Reducing Undesirable Audio Signals*  
Intel's ref: P11773  
Our ref: INTL-0597-US

Dear Mike:

Please return the original formal papers in the enclosed self-addressed, stamped envelope provided for your convenience.

Very truly yours,

Ruben S. Bains

RSB:svh

Enclosure  
Self-addressed, stamped envelope

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